

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 February 2005 (10.02.2005)

PCT

(10) International Publication Number
WO 2005/011503 A1

- (51) International Patent Classification⁷: **A61B 8/04**
- (21) International Application Number:
PCT/AU2004/001041
- (22) International Filing Date: 5 August 2004 (05.08.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2003904100 5 August 2003 (05.08.2003) AU
- (71) Applicant (for all designated States except US): **THE UNIVERSITY OF QUEENSLAND [AU/AU]**; St Lucia, Queensland 4072 (AU).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **MARWICK, Thomas, Hugh [AU/AU]**; The University of Queensland Department of Medicine, Woolloongabba, Queensland 4102 (AU). **HALUSKA, Brian [AU/AU]**; The University of Queensland Department of Medicine, WOOLLOONGABBA, Queensland 4102 (AU).
- (74) Agent: **FISHER ADAMS KELLY**; Level 13, AMP Place, 10 Eagle Street, Brisbane, Queensland 4000 (AU).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

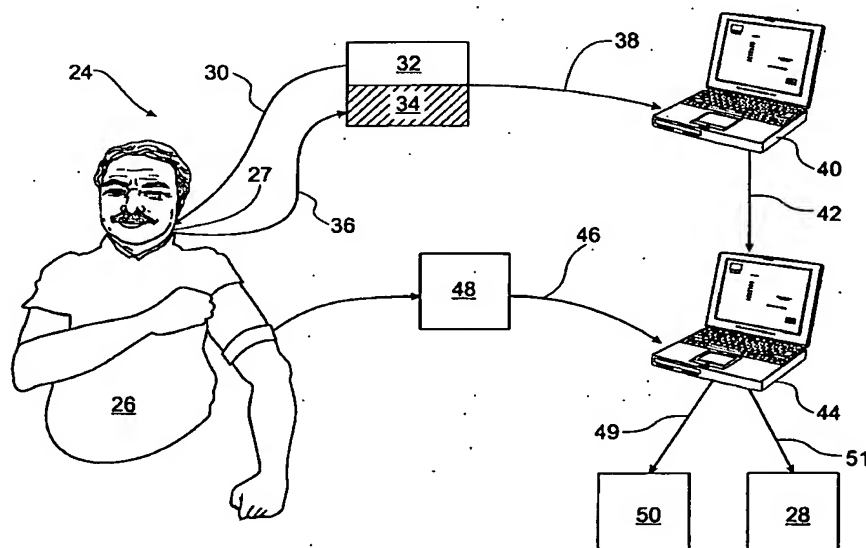
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR EARLY DETECTION OF CARDIOVASCULAR DISEASE USING VASCULAR IMAGING



(57) Abstract: The invention provides an apparatus (10) and method (24) for determining vascular characteristics for early detection of cardiovascular disease comprising: an ultrasonic signal source (32) directing ultrasound signals (30) at an artery (27); an ultrasonic signal receiver (34) receiving ultrasound signals (36) reflected from or transmitted through the artery (27); means for analysing signals (40) received by ultrasonic signal receiver (34) to extract arterial displacement data (42); means for acquiring blood pressure data (48); signal processing means (44) for adjusting said arterial displacement data (46) using the blood pressure data (48); and means for analysing the adjusted arterial displacement data (51) to characterise vascular function (28).



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.